# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/552,593 | 04/19/2000 | Ronald J. Gagnon | 9-13528-102US | 4092 |

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OGILVY RENAULT
1981 MCGILL COLLEGE AVENUE
SUITE 1600
MONTREAL, QC H3A2Y3
CANADA

| EXAMINER |
|---|
| PHILPOTT, JUSTIN M |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2665 | |

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/552,593 | GAGNON ET AL. |
| | Examiner | Art Unit | |
| | Justin M Philpott | 2665 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on *20 May 2004*.

2a)☐ This action is **FINAL**.    2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1.     A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection.  Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114.  Applicant's submission filed on May 20, 2004 has been entered.

### *Response to Arguments*

2.     Applicant's arguments filed May 20, 2004 have been fully considered but they are not

persuasive.

In an attempt to overcome the prior art rejections in the previous office action, applicant

has amended independent claims 1, 19, 39 and 52 to recite the additional limitation of: (1) the

first and second hyper-concatenated data streams having a variable user-selected concatenation,

and applicant has further amended independent claims 1, 19 and 39 to further recite the

additional limitation of: (2) the user-selection is provided by the data streams comprising

respective portions of an input signal.

However, while applicant has provided citations pertaining to the first limitation being

included in applicant's specification as originally filed (e.g., see Remarks, pages 13-14);

applicant has not provided citations pertaining to the second limitation being included in

applicant's specification as originally filed.  Upon review of the specification, Examiner was also

unable to find support which would indicate that the user-selection is provided by the data

streams comprising respective portions of an input signal. Accordingly, applicant's claims 1, 19

and 39 and their respective dependent claims are presently rejected in the following action under

35 U.S.C. 112 for containing subject matter which was not described in the specification as

originally filed.

Furthermore, the above-mentioned limitations are included in the preamble of the claims.

Thus, even if all of the limitations included in the claims are supported by applicant's

specification, the recitation of the above-mentioned limitations has not been given patentable

weight because the recitation occurs in the preamble. A preamble is generally not accorded any

patentable weight where it merely recites the purpose of a process or the intended use of a

structure, and where the body of the claim does not depend on the preamble for completeness

but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*,

535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478,

481 (CCPA 1951). Accordingly, applicant's claims remain rejected for the same reasons

discussed in the previous office action.

Still further, if applicant amends the claims to include the above-mentioned limitations

within the body of the claim, applicant is reminded that the first limitation regarding user-

selection is disclosed in the background of applicant's invention as admitted prior art (e.g., see

pages 1-2). Therefore, such an amendment would result in the claims being rejected under 35

U.S.C. 103(a) as being unpatentable over the cited prior art of the present rejections in view of

applicant's admitted prior art. Also, applicant is reminded that the second limitation regarding

user-selection provided by data streams comprising an input signal is not supported by

applicant's specification. Therefore, such an amendment would result in the claims remaining

rejected under 35 U.S.C. 112 for containing subject matter which was not described in the

specification as originally filed.

Finally, applicant has amended independent claim 52 to include an additional limitation

of inverse-multiplexing the high bandwidth signal across M data streams. However, such a

limitation is taught by the cited prior art as discussed in the following action.


### *Claim Rejections - 35 USC § 112*

3.      The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

4.      Claims 1-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in the relevant

art that the inventor(s), at the time the application was filed, had possession of the claimed

invention.

Specifically, claims 1, 19 and 39 recite the limitations of user-selection being provided by

the data streams comprising respective portions of an input signal. Applicant has not provided

citations pertaining to such a limitation being included in applicant's specification as originally

filed. Upon review of the specification, Examiner was also unable to find support which would

indicate that the user-selection is provided by the data streams comprising respective portions of

an input signal. Accordingly, applicant's claims 1, 19 and 39 and their respective dependent

claims 2-18, 20-38 and 40-51 are presently rejected in the following action under 35 U.S.C. 112

for containing subject matter which was not described in the specification as originally filed.


## *Claim Rejections - 35 USC § 102*

5.     The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

6.     Claims 1, 2, 4, 6, 7, 16-23, 25, 27, 28, 36-43, and 52 rejected under 35 U.S.C. 102(b) as

being anticipated by U.S. Patent No. 5,257,261 to Parruck et al.

Regarding claims 1, 19-22, 39-41 and 52, Parruck teaches a channel processor (e.g., 10-2

in FIG. 1a) adapted for aligning a respective first hyper-concatenated data stream (e.g., STS-3#2,

also see col. 3, lines 15-23 wherein the data streams may comprise the concatenation of any

number of STSn data streams) with a second hyper-concatenated data stream (e.g., STS-3#1),

each data stream being conveyed within a respective parallel channel and having substantially

equivalent bit and frame rates, the channel processor being connected to a respective channel for

processing the respective first data stream, and comprising: a) a framer (e.g., via demultiplexer

40 in FIG. 2) adapted to detect incoming frames and generate a local strobe signal (e.g.,

comprising J1 byte) indicative of a timing of incoming frames of the respective first data stream

(e.g., see col. 7, lines 1-21); b) a memory for buffering incoming bits of the respective first data

stream (e.g., FIFOs 45 in FIG. 2, see also col. 6, lines 48-68); c) an interface adapted to receive a

master strobe signal (e.g., comprising control signal and B3 parity value) from a selected

adjacent channel processor (e.g., see col. 5, lines 9-21); and d) an output timer (e.g., see retiming

block 18 in FIG. 1d) adapted to control a position of a read pointer for outgoing bits of the

respective first data stream based on a selected one of the local and master strobe signals (e.g., see col. 5, line 66 – col. 6, line 47).

Further, regarding claims 20-22 and 39-41, Parruck teaches a control unit adapted to: a) designate a master channel processor (e.g., 10-1, see FIGS. 1a and 1b and col. 3, lines 46-49) to operate in a free-running mode in which the timing of outgoing bits of a respective master hyper-concatenated data stream is based on the respective local strobe signal (e.g., see col. 4, lines 1-68); and b) designate a slave channel processor (e.g., 10-2, see col. 3, lines 46-49) to operate in a slave mode in which the timing of outgoing bits if a respective slave hyper-concatenated data stream is synchronized to that of the master data stream based on a master strobe signal (e.g., comprising control signals, see col. 3, lines 42-68) originating from the master channel processor. Furthermore, Parruck teaches a set of two of more adjacent slave channel processors (e.g., 10-2, 10-3) to successively propagate a strobe signal (e.g., comprising control signals) originating from the master channel processor to each one of the set of adjacent slave channel processors, whereby the timing of outgoing bits of each respective slave data stream is synchronized with that of the master data stream (e.g., see col. 3, lines 42-68).

Further, regarding claim 52, Parruck teaches inverse multiplexing the high bandwidth signal (e.g., STS-12c) across M (e.g., four) data streams (e.g., STS-3#n, wherein n equals 1 to 4, see FIG. 1a).

Regarding claim 2, Parruck further teaches that the data streams comprise an arbitrary mix of concatenated and non-concatenated SONET signals by disclosing that the signals may include, e.g., STS-3 and STS-3C (e.g., see col. 1, lines 37-43; FIG. 2 and col. 2, lines 62-63; and

col. 9, lines 22-23 wherein Parruck discloses STS-3 is used generally to indicate the signal may

be either a non-concatenated STS-3 signal or a concatenated STS-3C signal).

Regarding claims 4, 25 and 43, Parruck teaches the framer comprises: a) a detector

circuit (e.g., frame counter 50) adapted to generate a detection signal (e.g., frame count)

indicative of detection of a selected byte (e.g., H3 byte) of each incoming frame of the respective

first data stream; and b) a strobe circuit (e.g., decision block 52) adapted to generate the local

strobe signal (e.g., comprising J1 byte at multiplexer 55) with a predetermined timing relative to

the detection signal (e.g., see col. 6, line 48 – col. 9, line 23).

Regarding claims 6 and 27, Parruck teaches the memory is a FIFO buffer (e.g., FIFOs 45,

see FIG. 2) having a read pointer (e.g., READ#1) indicative of an address of an outgoing bit of

the respective first data stream.

Regarding claims 7 and 28, Parruck teaches a storage capacity of the memory (e.g.,

FIFOs 45) is selected on a basis of a maximum anticipated misalignment between the first and

second data streams (e.g., see col. 7, lines 47-69, wherein the FIFO accommodates up to 12 bytes

of delay).

Regarding claims 16 and 36, Parruck teaches the interface comprises first and second

input circuits (e.g., at rxB3 and rxSPE in FIG. 1b, coupled to demultiplexer 40 in FIG. 2) adapted

to receive a master strobe signal from a respective one of the first and second adjacent channel

processors.

Regarding claims 17 and 37, Parruck teaches a direction selector circuit (e.g., FIG. 2) is

adapted to couple (e.g., via multiplexer 50) a selected one of the first and second input circuit to

the output timer (e.g., retimed clock output), such that a master strobe signal propagated from a direction of the selected adjacent channel processor can be used by the output timer.

Regarding claims 18 and 38, Parruck teaches the interface further comprises first and second output circuits (e.g., at txB3 and txSPE in FIG. 1b) adapted to send a selected one of the local strobe signal and the master strobe signal to a respective one of the first and second adjacent channel processors.

Regarding claims 23 and 42, Parruck teaches the first and second hyper-concatenated data streams comprise concatenated SONET signals (e.g., see col. 1, lines 63-68).

## Claim Rejections - 35 USC § 103

7.      The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8.      Claims 5, 8, 9, 26, 29, 30 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parruck.

Regarding claims 5, 26, and 44, Parruck teaches detecting J1 bytes of incoming SONET frames and generating a detection signal with a predetermined timing relative to the reception of the J1 byte (e.g., see col. 7, lines 1-21).

However, Parruck may not specifically disclose detecting one or more of A1 and A2 bytes of incoming SONET frames and generating the detection signal with a predetermined timing relative to reception of the A1 byte.

Parruck further teaches, however, that while a particular byte (i.e., J1 byte) is described as being used for accomplishing realignment, it will be appreciated that different bytes could be

utilized (e.g., see col. 14, lines 51-61). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to detect the A1 or A2 bytes instead of J1 bytes in the system of Parruck as suggested by Parruck by teaching that different bytes could be utilized to accomplish the same realignment.

Regarding claims 8, 9, 29 and 30, as discussed above regarding claims 7 and 28, Parruck teaches a storage capacity of the memory (e.g., FIFOs 45) is selected on a basis of a maximum anticipated misalignment between the first and second data streams (e.g., see col. 7, lines 47-69). Furthermore, Parruck teaches the storage capacity of the memory (e.g., twenty-nine bytes deep and ten bits wide) is selected to provide suitable processing.

However, Parruck may not specifically disclose the memory is specifically equivalent to the number of bits received during an interval of up to 250 nsec or the size of up to one-half of a data frame.

However, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on Appellant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to arrange the storage capacity of the memory to a size of the number of bits received during an interval of up to 250 nsec or the size of up to one-half of

a data frame, since it is generally considered to be within the ordinary skill in the art to adjust,

vary, select or optimize the numerical parameters or values of any system absent a showing of

criticality in a particular recited value.

9.      Claims 3 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parruck

in view of U.S. Patent No. 6,160,819 to Partridge et al.

Regarding claims 3 and 24, Parruck teaches the system as discussed above regarding

claims 1 and 19, however, Parruck may not specifically disclose the parallel channels comprise a

wavelength of a WDM optical communications system.

Partridge teaches a method for multiplexing bytes over parallel communication links.

Specifically, Partridge discloses it is well known in the art that by transmitting information in

parallel the overall capacity on a SONET system can be increased (e.g., see col. 2, lines 30-32).

Furthermore, Partridge discloses it is well known in the art that WDM allows for high speed

transmission at a lower cost and a higher degree of reliability (e.g., see col. 2, lines 32-37). The

invention of Partridge teaches a technique for aggregating multiple high speed links for delivery

to other communication points utilizing WDM, wherein lower costs and higher efficiencies are

achieved (e.g., see col. 3, line 13 – col. 4, line 4). Thus, at the time of the invention it would

have been obvious to one of ordinary skill in the art to apply the teachings of Partridge to the

system of Parruck in order to achieve lower costs and higher efficiencies.

## *Allowable Subject Matter*

10.     Claim 10-15, 31-35 and 45-51 would be allowable if rewritten or amended to overcome

the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and if

rewritten in independent form including all of the limitations of the base claim and any

intervening claims.

11.     The following is a statement of reasons for the indication of allowable subject matter:

claims 10, 11, 31 and 45 recite a processor/system/method as in respective claims 6, 27

and 39, and further comprise:  a) phase error detection wherein a phase error is detected between

the local strobe signal and the master strobe signal, and b) pointer adjustment wherein the read

pointer is adjusted based on the detected phase error; claims 12-15, 32-35 and 46-51 are

dependent upon claims 10, 31 and 45, respectively, and include the above as well as further
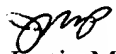
limitations.

## *Conclusion*

12.     Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357.  The

examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy D Vu can be reached on 703.308.6602.  The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Justin M Philpott

**ALPUS H. HSU**
**PRIMARY EXAMINER**